HIV and Injection Drug Use

The overlap of HIV and injection drug use, often of opioids, is well known. Since the beginning of the epidemic, the U.S. Centers for Disease Control and Prevention (CDC) estimates that more than one-third of all AIDS cases have been directly or indirectly linked to IDU. More recently, addiction to prescription opioids has become widespread. For people with HIV, untreated opioid addiction is associated with poor HIV treatment outcomes and a host of other medical, psychosocial, and legal consequences. The good news is that HIV primary care providers can successfully treat opioid-addicted patients.

1. What is addiction?

According to the American Society of Addiction Medicine (ASAM), "Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. . . . Addiction is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death."*

2. What are opioids?

Opioids are illicit or prescribed drugs, such as heroin, morphine, OxyContin, and methadone that bind to opioid receptors located in the nervous system (especially the brain and digestive tract). Opioids are often used to manage pain, since they reduce both perception of and reaction to pain; they also induce euphoria (as well as nausea, vomiting, constipation, sedation, respiratory depression, and overdose).

3. What do opioids do?

When opioids attach to receptors in the brain, they activate nerve cells and trigger the release of abnormal amounts of dopamine, a neurotransmitter—or messenger—associated with learning, pleasure, and reward. Over time, opioid use changes brain chemistry, leading people to try to restore dopamine levels by continuing drug use.

4. How do you treat opioid addiction?

The preferred mode of treatment is MAT, which combines pharmacotherapy with methadone, buprenorphine, or naltrexone, individualized counseling, and behavioral therapy.

5. What is Suboxone?

Suboxone is a coformulation of two medications, buprenorphine and naloxone. It comes as tablets or film and is administered sublingually (under the tongue).

Buprenorphine works in two ways. First, it displaces other opioids from the receptors they occupy in the brain. Then, it binds tightly to these same receptors, so that other opioids cannot occupy them. People who take buprenorphine do not experience withdrawal symptoms or strong cravings for other opioids.

Naloxone reverses opioid overdose by binding to and blocking opioid receptors. Sublingual naloxone is poorly absorbed, whereas injecting naloxone causes the immediate onset of withdrawal symptoms (also known as "precipitated withdrawal"). Naloxone was added to buprenorphine to discourage injection and diversion.

6. What are the differences between buprenorphine, methadone, and naltrexone?

Buprenorphine is a partial opioid agonist. Effects from a partial opioid agonist are weaker than those produced by a full opioid agonist, because they do not fully activate the brain's opioid receptors. Buprenorphine also blocks the effects of other opioids. Buprenorphine is available in either mono or combination (with naloxone) form. Buprenorphine monotherapy, however, is available only in

*American Society of Addiction Medicine. *Public policy statement: definition of addiction.* August 15, 2011. Available at: www.asam.org/docs/publicy-policy-statements/1definition_of_addiction_long_4-11.pdf?sfvrsn=2#search=%22addiction%20is%20a%20primary%20%20chronic%20disease%20of%20brain%20r%22.

generic form. (Subutex, the brand version, was discontinued in September 2011.)

Naloxone is an opioid blocker but is not very effective unless it is injected. It is added to buprenorphine to discourage injection. In contrast, methadone is a full opioid agonist. Methadone blocks other opioids while producing the full effects of opioids.

Naltrexone is an opioid antagonist. It is not a controlled substance like methadone and buprenorphine and thus does not have abuse potential. It does not activate the opioid receptors in any way; rather, it blocks opioids from activating them. Injectable naltrexone is available for monthly injection rather than daily doses (like buprenorphine and methadone), however, this form of naltrexone is more costly. Patients need to have refrained from opioid use for 7–10 days, longer than is required for buprenorphine or methadone initiation; as such, naltrexone may be best for those patients with shorter or less severe abuse histories.

Buprenorphine can be administered as part of HIV primary care by qualified physicians, whereas methadone is available through certified, accredited OTPs, which are highly regulated and structured entities. Naltrexone can be prescribed by any medical personnel with prescribing privileges.

7. How do I qualify to become a buprenorphine prescriber?

The Drug Addiction Treatment Act of 2000 (DATA 2000) made it possible for qualified physicians to obtain a waiver allowing them to prescribe and dispense medications that the FDA has approved for treatment of opioid addiction; buprenorphine is approved for this indication.

Nurse practitioners and physician assistants cannot prescribe buprenorphine. To qualify, doctors who do not already have credentials in addiction medicine need to complete 8 hours of training, demonstrate the capacity to refer their patients for counseling and other non-pharmacologic therapies, and apply for a special DEA number. Initially, qualified prescribers can treat 30 patients; after a year they can submit notification of need and intent to treat 100 patients.

8. How safe is Buprenorphine?

Buprenorphine has a "ceiling effect"; after a certain threshold, increasing the dose does not increase the effects, resulting in a lower risk of overdose. However, the risk of overdose is greatly increased when buprenorphine is combined with alcohol, benzodiazepines, or other opioids.

Common side effects include depression, constipation, dizziness, drowsiness, headache, muscle aches, nausea, sweating, and vomiting.

9. Can buprenorphine be used with HIV drugs?

Buprenorphine may share metabolic pathways with some HIV drugs and thus, monitoring and dose reduction are not always necessary. (Also see drug chart in training manual for buprenorphine with specific HIV medications.)

10. How quickly does buprenorphine work?

Three stages are involved. Patients must be in mild withdrawal before they start buprenorphine, a process called *induction,* which can be done in a doctor's office over a 2- to 4-hour interval. The goal of induction is to identify a dose of buprenorphine that will stop withdrawal symptoms and block drug cravings.

After approximately a week, *stabilization* begins; over 1 to 2 months, patients are seen on a weekly basis to assess the need for buprenorphine dose adjustments.

Once patients are medically and psychosocially stable, the *maintenance* phase begins. Maintenance can last indefinitely, depending on the goals of individual patients, or buprenorphine can be very gradually tapered in patients who wish to stop.